

Amendments to the Claims

1. (currently amended) A phonetic data processing system comprising:

- A. a computer processing device having access to a memory;
- B. a rich semantic grammar (RSG) stored in said memory and comprising one or more grammars comprising syntactic information and semantic information; and
- C. a phonetic data processing module, executable by said processing device, said module comprising:

- BM
- (1) a phonetic searcher, configured to generate using syntactic analysis, as a function of syntactic information derived from said RSG and a received phonetic stream comprised of phonetic estimates, a set of sequences comprising a set of best words from said RSG corresponding to said phonetic estimates; and
  - (2) a semantic parser module, configured to generate a context free set of semantic data from said sequences and said RSG, wherein said set of semantic data includes all valid interpretations of the sequences.

2. (original) A system as in claim 1, wherein each of said sequences comprises set of words combined to define word paths.

3. (original) A system as in claim 1, wherein said phonetic searcher is configured to extract a context free grammar (CFG) comprising syntactic information from said RSG and is

further configured to access said CFG to generate said set of best words.

4. (original) A system as in claim 1, wherein each of said phonetic estimates has a fixed start time and a plurality of end times, and wherein there is a score associated with each end time corresponding to the likelihood that a given phonetic estimate is a word or a syllable in said RSG.
5. (original) A system as in claim 4, wherein said phonetic searcher includes a grammar builder configured to selectively combine words from said set of best words into sequences, as a function of the start time and end times of said phonetic estimates corresponding to said words.
6. (original) A system as in claim 5, said phonetic searcher is configured to combine said words using dynamic programming.
7. (currently amended) A phonetic data processing system as in claim 1, comprising:
- A. a computer processing device having access to a memory;
  - B. a rich semantic grammar (RSG) stored in said memory and comprising one or more grammars comprising syntactic information and semantic information; and
  - C. a phonetic data processing module, executable by said processing device, said module comprising:
    - (1) a phonetic searcher, configured to generate, as a function of said RSG and a received phonetic stream comprised of phonetic estimates, a set of

sequences comprising a set of best words from said RSG corresponding to said phonetic estimates; and

- (2) a semantic parser module, configured to generate a set of semantic data from said sequences and said RSG, wherein said set of semantic data includes all valid interpretations of the sequences,

wherein said RSG is a context free grammar tree comprising nodes having certain of said syntactic and semantic information associated with each of a plurality of said nodes.

8. (currently amended) A system as in claim 1, wherein said semantic information includes one or more categories, and each category may dictates an interpretation of semantic data at a corresponding node ~~word~~.

9. (currently amended) A system as in claim 1, wherein said semantic information includes one or more operators at any tree node, and each operator ~~defines~~ dictates an interpretation for a sub-tree at a corresponding node ~~a manner of combining a plurality of words~~.

10. (original) A system as in claim 1, further comprising:

- (3) an application program, configured to receive said set of semantic data and to define context information associated with said phonetic stream;
- (4) a semantic evaluator, configured to interpret said set of semantic data in accordance with said context information and to derive a linguistic result therefrom.

11. (original) A system as in claim 10, wherein said set of semantic data is represented as a tree of nodes representing all valid interpretations of said word sequences and said semantic evaluator is configured to determine a category at each node, as a function of said context information, and to apply to values at each node a corresponding category to determine said linguistic result.

12. (currently amended) A phonetic data processing system as in claim 1, comprising:

- BM
- A. a computer processing device having access to a memory;
  - B. a rich semantic grammar (RSG) stored in said memory and comprising one or more grammars comprising syntactic information and semantic information; and
  - C. a phonetic data processing module, executable by said processing device, said module comprising:
    - (1) a phonetic searcher, configured to generate, as a function of said RSG and a received phonetic stream comprised of phonetic estimates, a set of sequences comprising a set of best words from said RSG corresponding to said phonetic estimates; and
    - (3) a semantic parser module, configured to generate a set of semantic data from said sequences and said RSG, wherein said set of semantic data includes all valid interpretations of the sequences,

wherein said set of semantic data is a semantic tree comprised of a set of nodes representing all valid interpretations of said sequences.

13. (currently amended) A method of processing phonetic data, comprising:

- A. defining in a memory a ~~context-free~~ rich semantic grammar (RSG) comprising syntactic and semantic information;
- B. receiving a phonetic stream comprising phonetic estimates;
- C. generating, using syntactic analysis, a set of sequences comprised of best words, as a function of syntactic information derived from said RSG and said phonetic stream;
- D. generating, from said sequences and said RSG, a context free set of semantic data including all valid interpretations of said sequences.

14. (original) A method as in claim 13, wherein each of said sequences is comprised of a set of words combined to define word paths.

15. (original) A method as in claim 13, wherein said phonetic searching includes extracting a context free grammar comprising syntactic information from said RSG.

16. (original) A method as in claim 13, wherein said phonetic searching includes:

- (1) determining for each of said phonetic estimates a fixed start time and a plurality of end times; and
- (2) determining a score associated with each end time corresponding to the likelihood that a given phonetic estimate is a word or a syllable in said RSG.

17. (original) A method as in claim 16, wherein said phonetic searching further includes:

- (3) combining said words from said set of best words into said sequences, as a

function of the start time and the end times of said phonetic estimates  
corresponding to said words.

18. (original) A method as in claim 16, wherein said phonetic searching includes:

(3) combining said words using dynamic programming.

19. (original) A method as in claim 13, wherein said RSG is a grammar tree comprising nodes  
having certain of said syntactic and semantic information associated with each of said  
nodes.

20. (original) A method as in claim 13, further including:

- BM
- E. defining a context associated with said phonetic stream by an application  
program; and
  - F. interpreting said set of semantic data with a semantic evaluator, in accordance  
with said context, and deriving a linguistic result therefrom.

21. (original) A method as in claim 20, wherein interpreting said set of semantic data includes,  
for each node, determining a category at a given node, as a function of said context, and  
applying said category to interpret values at said given node.

22. (original) A method as in claim 13, wherein generating said set of semantic data includes  
generating a semantic tree instance comprised of a set of nodes representing all valid  
interpretations of said sequences.

23. (currently amended) A phonetic searcher, coupled to a database comprising a ~~context free~~ rich semantic grammar (RSG) tree including syntactic and semantic information at each node in said grammar tree, and configured to receive a phonetic stream of data and to generate a word list representing all valid words represented by said phonetic stream, as a function of syntactic information derived from derived said RSG tree.

24. (currently amended) A grammar builder configured to combine words in a word path, wherein the grammar builder is coupled to a database comprising a context free grammar, including syntactic information, and is coupled to a database comprising a context free set of valid words representing valid interpretations of ~~corresponding to~~ a stream of phonetic estimates, wherein each of said phonetic estimates is represented as having a fixed start time and a plurality of end times, and wherein said grammar builder is configured to selectively combine words from said set of words as a function of said fixed start time and said end times of phonetic estimates corresponding said words to be combined.

25. (original) A grammar builder as in claim 24, wherein for each phonetic estimate, a score is associated with each of said end times, and wherein said score is related to a probability that said phonetic estimate is a certain word or syllable from said context free grammar.

26. (currently amended) A semantic parser coupled to a database having a context free rich semantic grammar (RSG) and configured to generate a context free set of semantic data as a function of a set of word sequences and said RSG, wherein said sequences include

words derived from a phonetic stream and said RSG, and said set of semantic data includes all valid interpretations of the sequences.

27. (original) A semantic parser as in claim 26, wherein the RSG is a grammar tree comprised of a plurality of nodes, one or more of said nodes including syntactic information and semantic information.

28. (original) A semantic parser as in claim 26, wherein said set of semantic data is a semantic tree.

BY 29. (currently amended) A semantic tree evaluation tool coupled to an application program that defines a context and coupled to a memory including a semantic tree representing all valid interpretations of a phonetic stream, said semantic tree evaluation tool configured to generate a linguistic result as a single valid interpretation of said phonetic stream, in accordance with said context of the application program.

30. (original) A semantic evaluation tool as in claim 29, wherein said semantic tree is comprised of a plurality of nodes including semantic information, and wherein said semantic evaluation tool is configured to determine at each of said nodes a category, as a function of said context, and to apply to values at each node a corresponding category to determine said linguistic result.